

GROUP NO.: 1

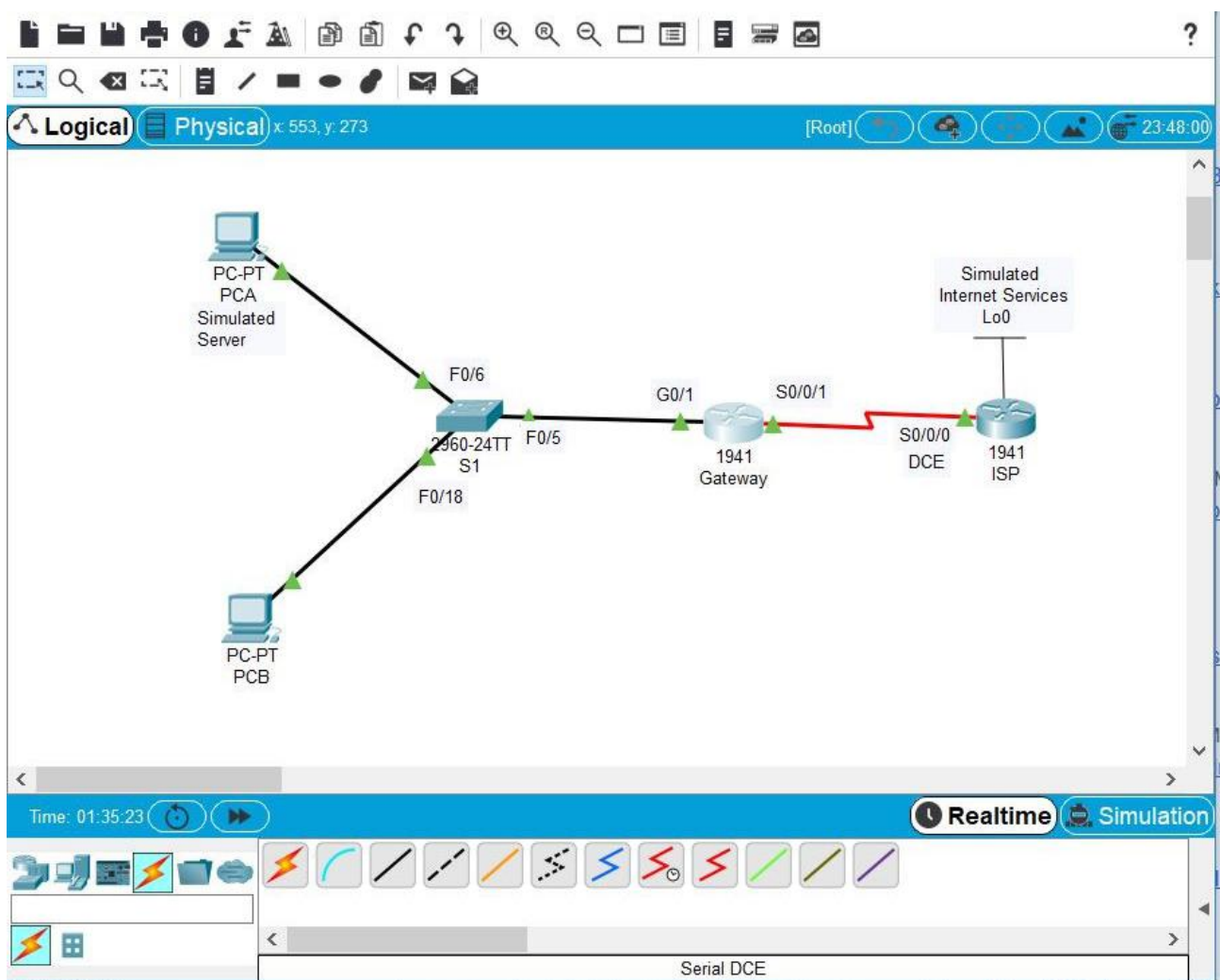
Apeksha Chavan (2017130013) Roll No.: 2

Darshak Bali (2017130008) Roll No.: 1

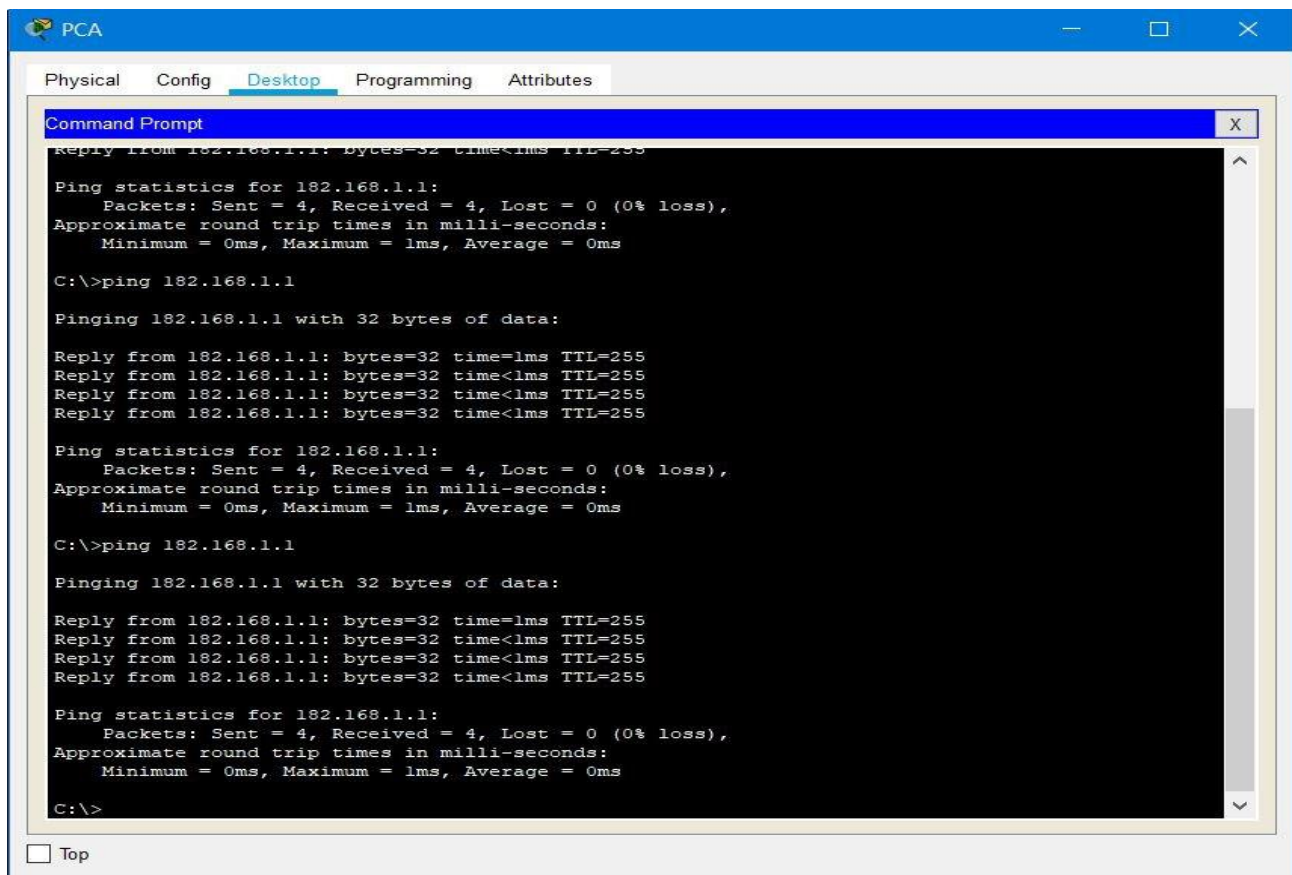
## DCCN LAB ISE2

### Task 1:

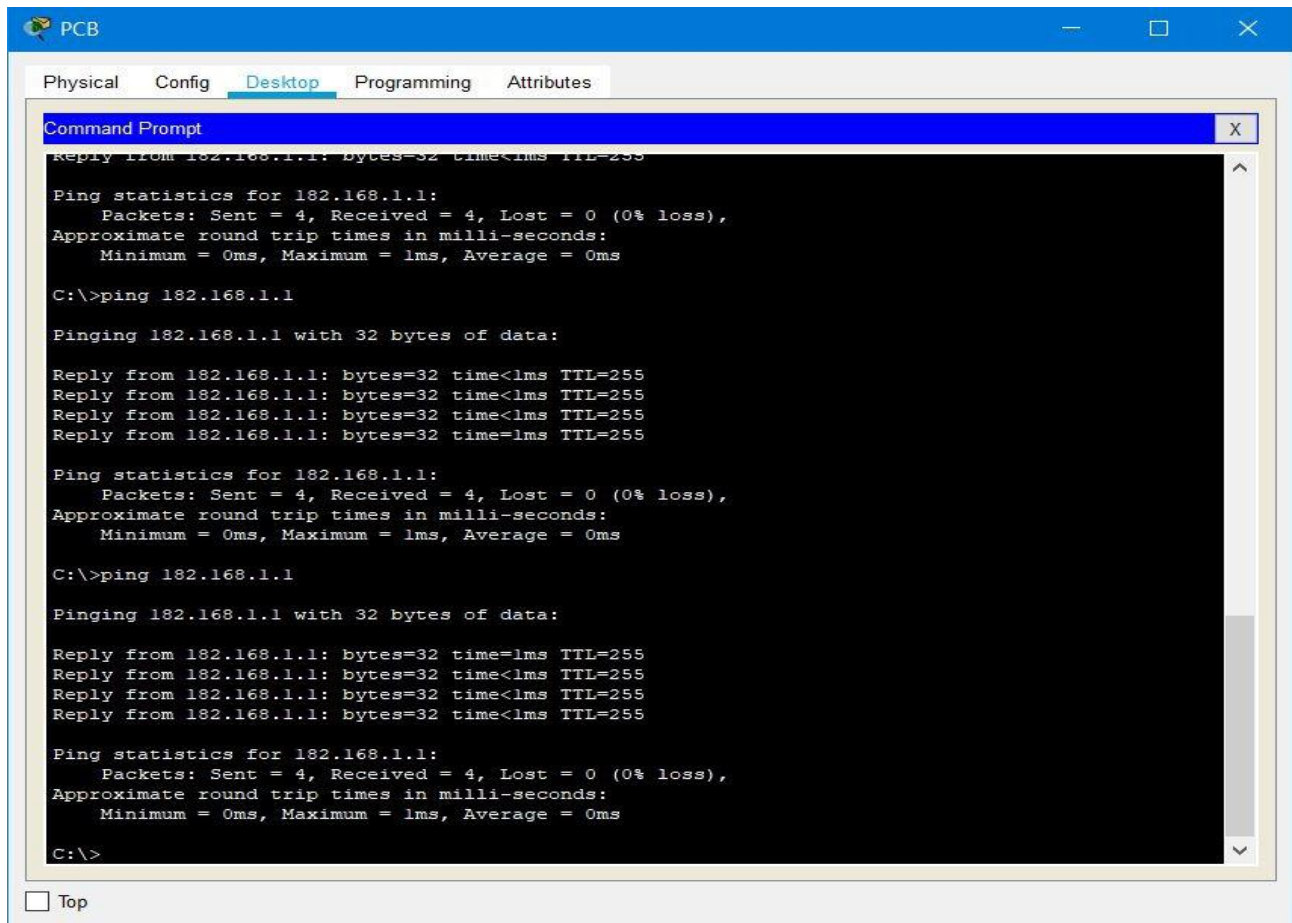
Final Network:



Pinging G0/1 interface on the gateway router from PCA:



Pinging G0/1 interface on the gateway router from PCB:



The screenshot shows a Windows window titled "PCB" with tabs for Physical, Config, Desktop, Programming, and Attributes. The "Desktop" tab is active, displaying a Command Prompt window. The Command Prompt shows the results of a ping command to 182.168.1.1, including statistics and individual replies.

```
Command Prompt
Reply from 182.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 182.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 182.168.1.1

Pinging 182.168.1.1 with 32 bytes of data:

Reply from 182.168.1.1: bytes=32 time<1ms TTL=255
Reply from 182.168.1.1: bytes=32 time<1ms TTL=255
Reply from 182.168.1.1: bytes=32 time<1ms TTL=255
Reply from 182.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 182.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 182.168.1.1

Pinging 182.168.1.1 with 32 bytes of data:

Reply from 182.168.1.1: bytes=32 time<1ms TTL=255
Reply from 182.168.1.1: bytes=32 time<1ms TTL=255
Reply from 182.168.1.1: bytes=32 time<1ms TTL=255
Reply from 182.168.1.1: bytes=32 time<1ms TTL=255

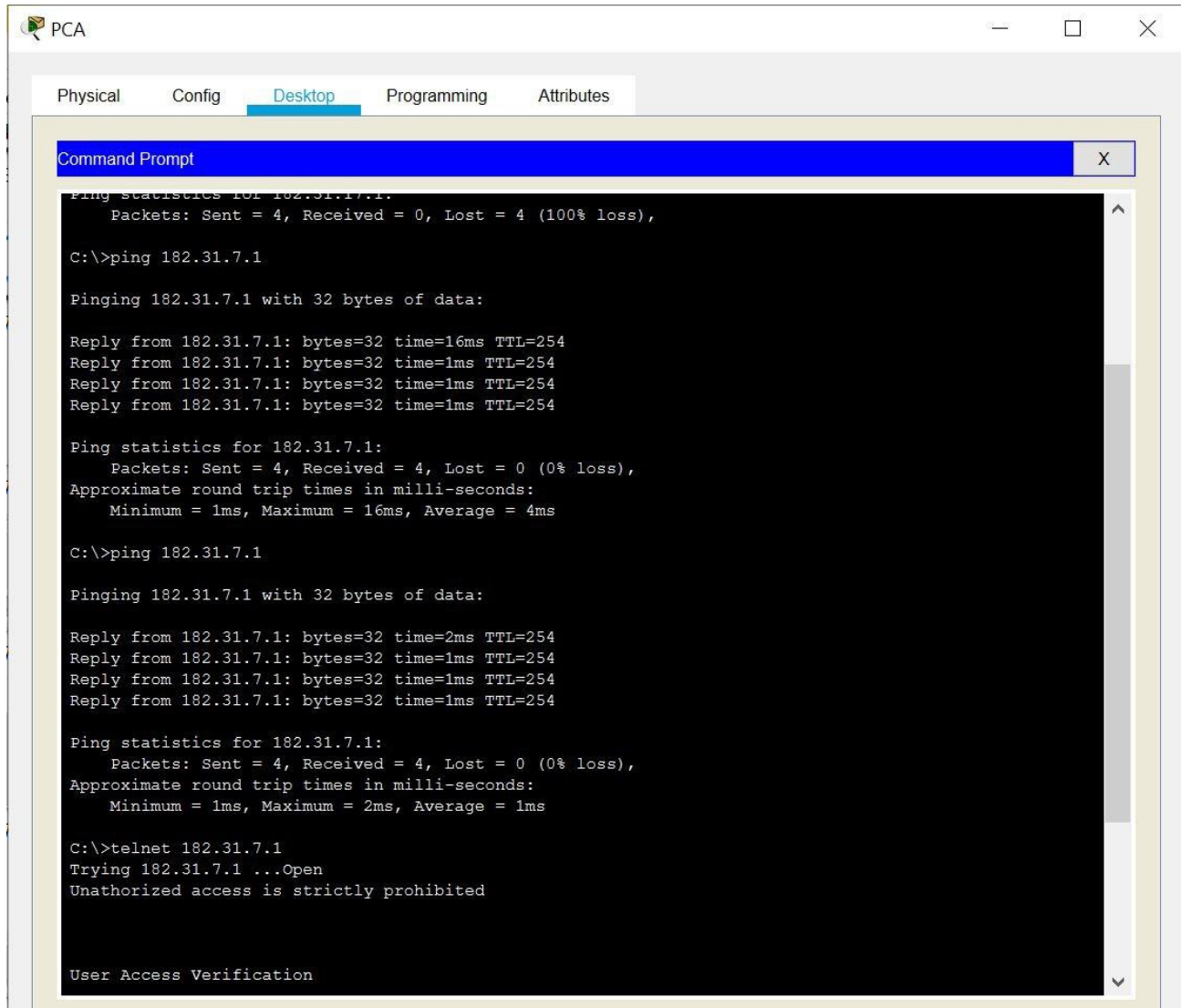
Ping statistics for 182.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

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## Task 2:

Pinging 182.31.7.1 from PC-A:



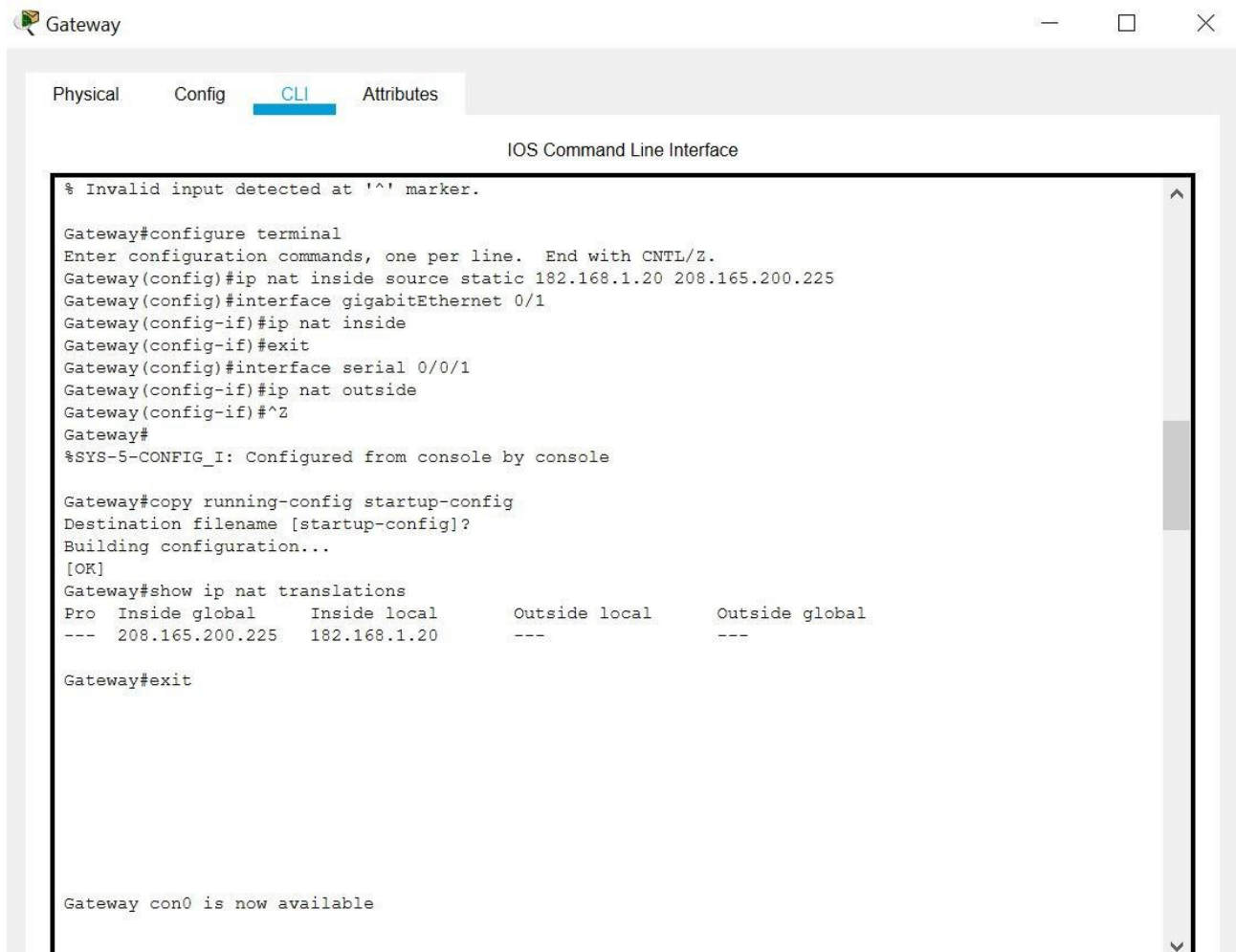
PCA

Physical Config **Desktop** Programming Attributes

Command Prompt

```
Ping statistics for 182.31.7.1:  
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),  
  
C:\>ping 182.31.7.1  
  
Pinging 182.31.7.1 with 32 bytes of data:  
  
Reply from 182.31.7.1: bytes=32 time=16ms TTL=254  
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254  
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254  
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254  
  
Ping statistics for 182.31.7.1:  
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
Minimum = 1ms, Maximum = 16ms, Average = 4ms  
  
C:\>ping 182.31.7.1  
  
Pinging 182.31.7.1 with 32 bytes of data:  
  
Reply from 182.31.7.1: bytes=32 time=2ms TTL=254  
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254  
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254  
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254  
  
Ping statistics for 182.31.7.1:  
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
Minimum = 1ms, Maximum = 2ms, Average = 1ms  
  
C:\>telnet 182.31.7.1  
Trying 182.31.7.1 ...Open  
Unathorized access is strictly prohibited  
  
User Access Verification
```

The following shows the NAT translations' output:



The screenshot shows a web-based interface for a Gateway device. At the top, there are tabs for 'Physical', 'Config', 'CLI' (which is selected and highlighted in blue), and 'Attributes'. Below the tabs, the title 'IOS Command Line Interface' is displayed. The main area contains a terminal window with the following text:

```
% Invalid input detected at '^' marker.  
  
Gateway#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Gateway(config)#ip nat inside source static 182.168.1.20 208.165.200.225  
Gateway(config)#interface gigabitEthernet 0/1  
Gateway(config-if)#ip nat inside  
Gateway(config-if)#exit  
Gateway(config)#interface serial 0/0/1  
Gateway(config-if)#ip nat outside  
Gateway(config-if)#^Z  
Gateway#  
%SYS-5-CONFIG_I: Configured from console by console  
  
Gateway#copy running-config startup-config  
Destination filename [startup-config]?  
Building configuration...  
[OK]  
Gateway#show ip nat translations  
Pro  Inside global      Inside local      Outside local      Outside global  
---  208.165.200.225      182.168.1.20      ---               ---  
  
Gateway#exit  
  
Gateway con0 is now available
```

Physical Config CLI Attributes

## IOS Command Line Interface

Unauthorized access is strictly prohibited.

User Access Verification

Password:

Gateway>enable

Password:

Gateway#show ip nat translations

Pro	Inside global	Inside local	Outside local	Outside global
---	208.165.200.225	182.168.1.20	---	---

Gateway#show ip nat translations

Pro	Inside global	Inside local	Outside local	Outside global
icmp	208.165.200.225:10	182.168.1.20:10	182.31.7.1:10	182.31.7.1:10
icmp	208.165.200.225:11	182.168.1.20:11	182.31.7.1:11	182.31.7.1:11
icmp	208.165.200.225:12	182.168.1.20:12	182.31.7.1:12	182.31.7.1:12
icmp	208.165.200.225:9	182.168.1.20:9	182.31.7.1:9	182.31.7.1:9
---	208.165.200.225	182.168.1.20	---	---

Gateway#exit

Gateway con0 is now available

## IOS Command Line Interface

Unauthorized access is strictly prohibited.

User Access Verification

Password:

Gateway>enable

Password:

Gateway#show ip nat translations

Pro	Inside global	Inside local	Outside local	Outside global
---	208.165.200.225	182.168.1.20	---	---
tcp	208.165.200.225:1025	182.168.1.20:1025	182.31.7.1:23	182.31.7.1:23

Gateway#show ip nat translations

Pro	Inside global	Inside local	Outside local	Outside global
icmp	208.165.200.225:1	182.168.1.20:1	208.165.201.17:1	208.165.201.17:1
icmp	208.165.200.225:2	182.168.1.20:2	208.165.201.17:2	208.165.201.17:2
icmp	208.165.200.225:3	182.168.1.20:3	208.165.201.17:3	208.165.201.17:3
icmp	208.165.200.225:4	182.168.1.20:4	208.165.201.17:4	208.165.201.17:4
icmp	208.165.200.225:5	182.168.1.20:5	208.165.201.17:5	208.165.201.17:5
---	208.165.200.225	182.168.1.20	---	---
tcp	208.165.200.225:1025	182.168.1.20:1025	182.31.7.1:23	182.31.7.1:23

Gateway#show ip nat statistics

Total translations: 2 (1 static, 1 dynamic, 1 extended)

Outside Interfaces: Serial0/0/1

Inside Interfaces: GigabitEthernet0/1

Hits: 158 Misses: 18

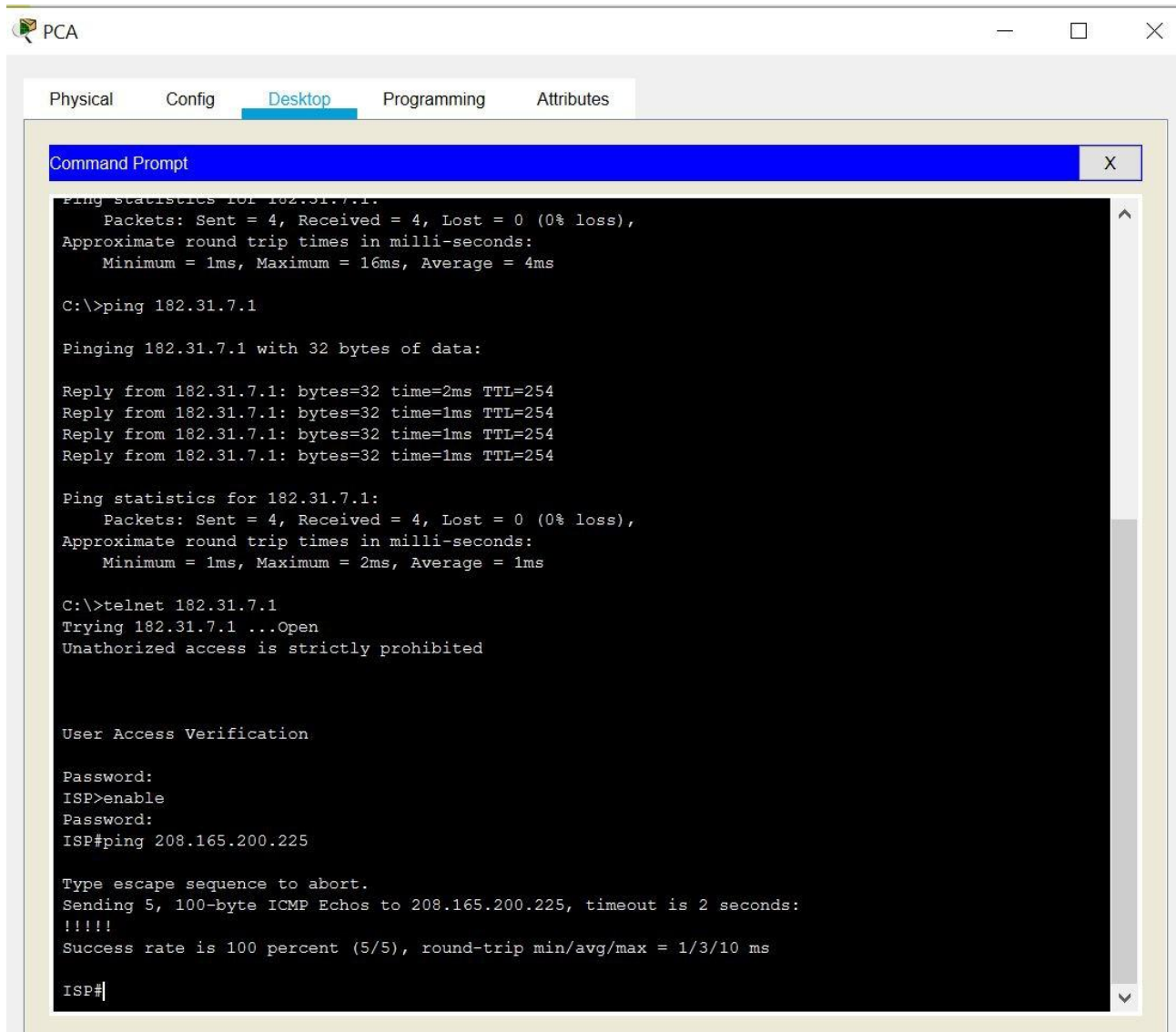
Expired translations: 17

Dynamic mappings:

Gateway#



And shown below is the output of the ISP when we ping 208.165.200.225



The screenshot shows a Packet Configuration Assistant (PCA) window with tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying a Command Prompt window. The Command Prompt shows the output of a ping command to 182.31.7.1 and a telnet session to the same IP. The telnet session shows a password prompt, a successful login, and a ping command to 208.165.200.225. The output of the ping command shows a success rate of 100 percent (5/5) with a round-trip time of 1/3/10 ms.

```
PCA
Physical Config Desktop Programming Attributes

Command Prompt
Ping statistics for 182.31.7.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 16ms, Average = 4ms

C:\>ping 182.31.7.1

Pinging 182.31.7.1 with 32 bytes of data:

Reply from 182.31.7.1: bytes=32 time=2ms TTL=254
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254

Ping statistics for 182.31.7.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\>telnet 182.31.7.1
Trying 182.31.7.1 ...Open
Unauthorized access is strictly prohibited

User Access Verification

Password:
ISP>enable
Password:
ISP#ping 208.165.200.225

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 208.165.200.225, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/3/10 ms

ISP#
```



## IOS Command Line Interface

```
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

Unauthorized access is strictly prohibited

User Access Verification

Password:

ISP>enable
Password:
ISP#ping 208.165.200.225

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 208.165.200.225, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/7/12 ms

ISP#ping 208.165.200.225

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 208.165.200.225, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/3/8 ms

ISP#
```

**TASK 3:**

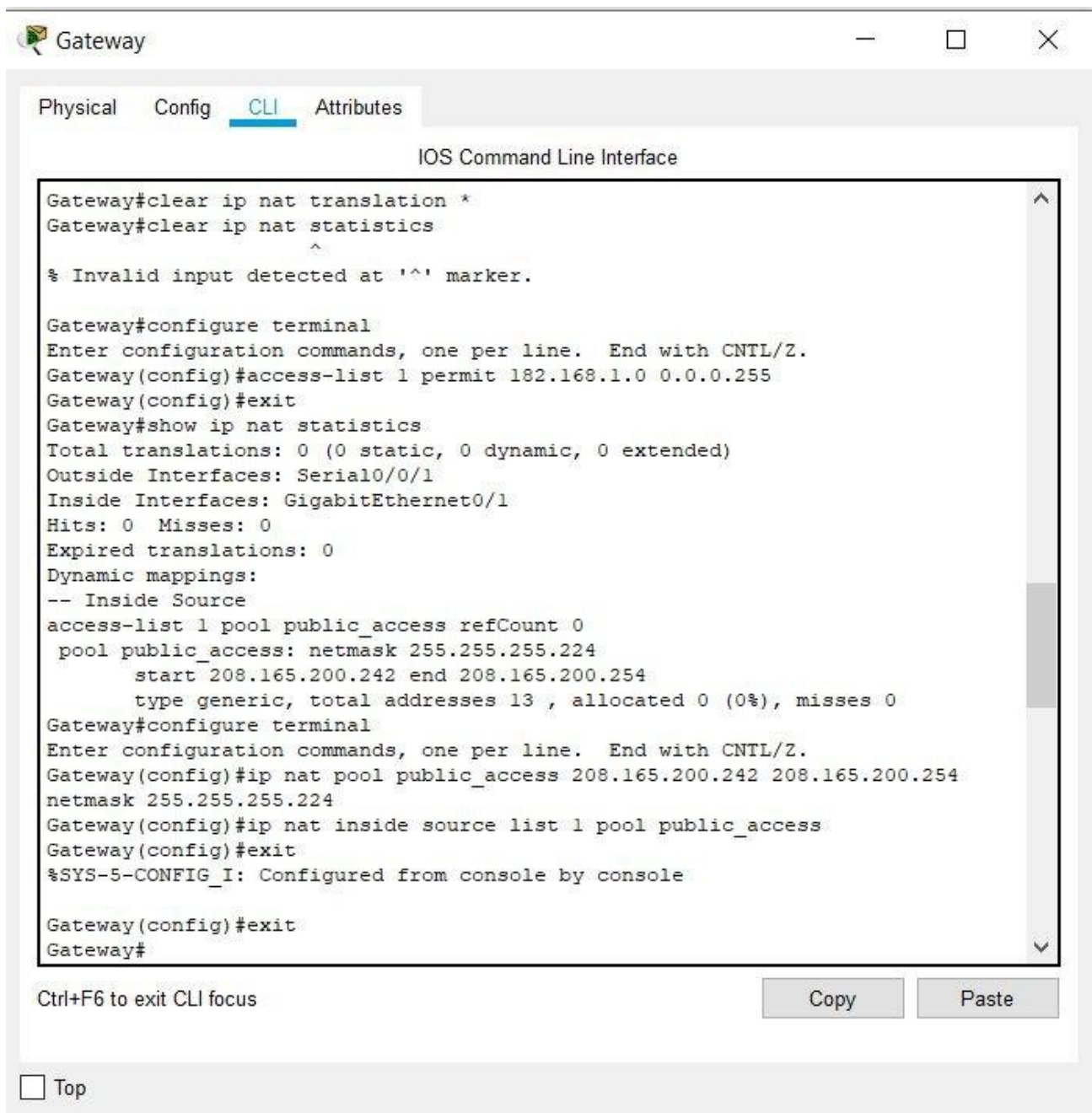
1)clear ip nat translation \*  
clear ip nat statistics

2)access-list 1 permit 182.168.1.0 0.0.0.255

3)show ip nat statistics

4)ip nat pool public\_access 208.165.200.242 208.165.200.254 netmask 255.255.255.224

5)ip nat inside source list 1 pool public\_access



The screenshot shows a window titled "Gateway" with a tabbed interface. The "CLI" tab is selected, displaying the "IOS Command Line Interface". The terminal output shows the following commands and their results:

```
Gateway#clear ip nat translation *
Gateway#clear ip nat statistics
^
% Invalid input detected at '^' marker.

Gateway#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Gateway(config)#access-list 1 permit 182.168.1.0 0.0.0.255
Gateway(config)#exit
Gateway#show ip nat statistics
Total translations: 0 (0 static, 0 dynamic, 0 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 0 Misses: 0
Expired translations: 0
Dynamic mappings:
-- Inside Source
access-list 1 pool public_access refCount 0
 pool public_access: netmask 255.255.255.224
   start 208.165.200.242 end 208.165.200.254
   type generic, total addresses 13 , allocated 0 (0%), misses 0
Gateway#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Gateway(config)#ip nat pool public_access 208.165.200.242 208.165.200.254
netmask 255.255.255.224
Gateway(config)#ip nat inside source list 1 pool public_access
Gateway(config)#exit
%SYS-5-CONFIG_I: Configured from console by console

Gateway(config)#exit
Gateway#
```

Below the terminal window, there is a status bar with the text "Ctrl+F6 to exit CLI focus" and two buttons: "Copy" and "Paste". At the bottom left, there is a checkbox labeled "Top".

6)show ip nat translations

7)show ip nat statistics

8)no ip nat inside source static 182.168.1.20 208.165.200.225

Gateway

Physical Config CLI Attributes

IOS Command Line Interface

```
netmask 255.255.255.224
Gateway(config)#ip nat inside source list 1 pool public_access
Gateway(config)#exit
%SYS-5-CONFIG_I: Configured from console by console

Gateway(config)#exit
Gateway#
%SYS-5-CONFIG_I: Configured from console by console

Gateway#show ip nat translations
Pro  Inside global      Inside local      Outside local      Outside global
icmp 208.165.200.242:1 182.168.1.21:1    182.31.7.1:1      182.31.7.1:1
icmp 208.165.200.242:2 182.168.1.21:2    182.31.7.1:2      182.31.7.1:2
icmp 208.165.200.242:3 182.168.1.21:3    182.31.7.1:3      182.31.7.1:3
icmp 208.165.200.242:4 182.168.1.21:4    182.31.7.1:4      182.31.7.1:4

Gateway#show ip nat statistics
Total translations: 4 (0 static, 4 dynamic, 4 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 4 Misses: 4
Expired translations: 0
Dynamic mappings:
-- Inside Source
access-list 1 pool public_access refCount 4
 pool public_access: netmask 255.255.255.224
   start 208.165.200.242 end 208.165.200.254
   type generic, total addresses 13 , allocated 1 (7%), misses 0
Gateway#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Gateway(config)#no ip nat inside source static 182.168.1.20 208.165.200.225
```

Ctrl+F6 to exit CLI focus

Copy Paste

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9)clear ip nat translation \*

- 10)show ip nat statistics
- 11)show ip nat translations

Gateway

PhysicalConfigCLIAttributes

IOS Command Line Interface

```
%Translation not found
Gateway(config)#
Gateway(config)#exit
Gateway#clear ip nat translation *
%SYS-5-CONFIG_I: Configured from console by console

Gateway#clear ip nat translation *
Gateway#show ip nat statistics
Total translations: 8 (0 static, 8 dynamic, 8 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 12 Misses: 12
Expired translations: 0
Dynamic mappings:
-- Inside Source
access-list 1 pool public_access refCount 8
 pool public_access: netmask 255.255.255.224
   start 208.165.200.242 end 208.165.200.254
   type generic, total addresses 13 , allocated 2 (15%), misses 0
Gateway#show ip nat translations
Pro  Inside global      Inside local          Outside local          Outside global
icmp 208.165.200.242:1 182.168.1.20:1        182.31.7.1:1          182.31.7.1:1
icmp 208.165.200.242:2 182.168.1.20:2        182.31.7.1:2          182.31.7.1:2
icmp 208.165.200.242:3 182.168.1.20:3        182.31.7.1:3          182.31.7.1:3
icmp 208.165.200.242:4 182.168.1.20:4        182.31.7.1:4          182.31.7.1:4
icmp 208.165.200.243:5 182.168.1.21:5        182.31.7.1:5          182.31.7.1:5
icmp 208.165.200.243:6 182.168.1.21:6        182.31.7.1:6          182.31.7.1:6
icmp 208.165.200.243:7 182.168.1.21:7        182.31.7.1:7          182.31.7.1:7
icmp 208.165.200.243:8 182.168.1.21:8        182.31.7.1:8          182.31.7.1:8

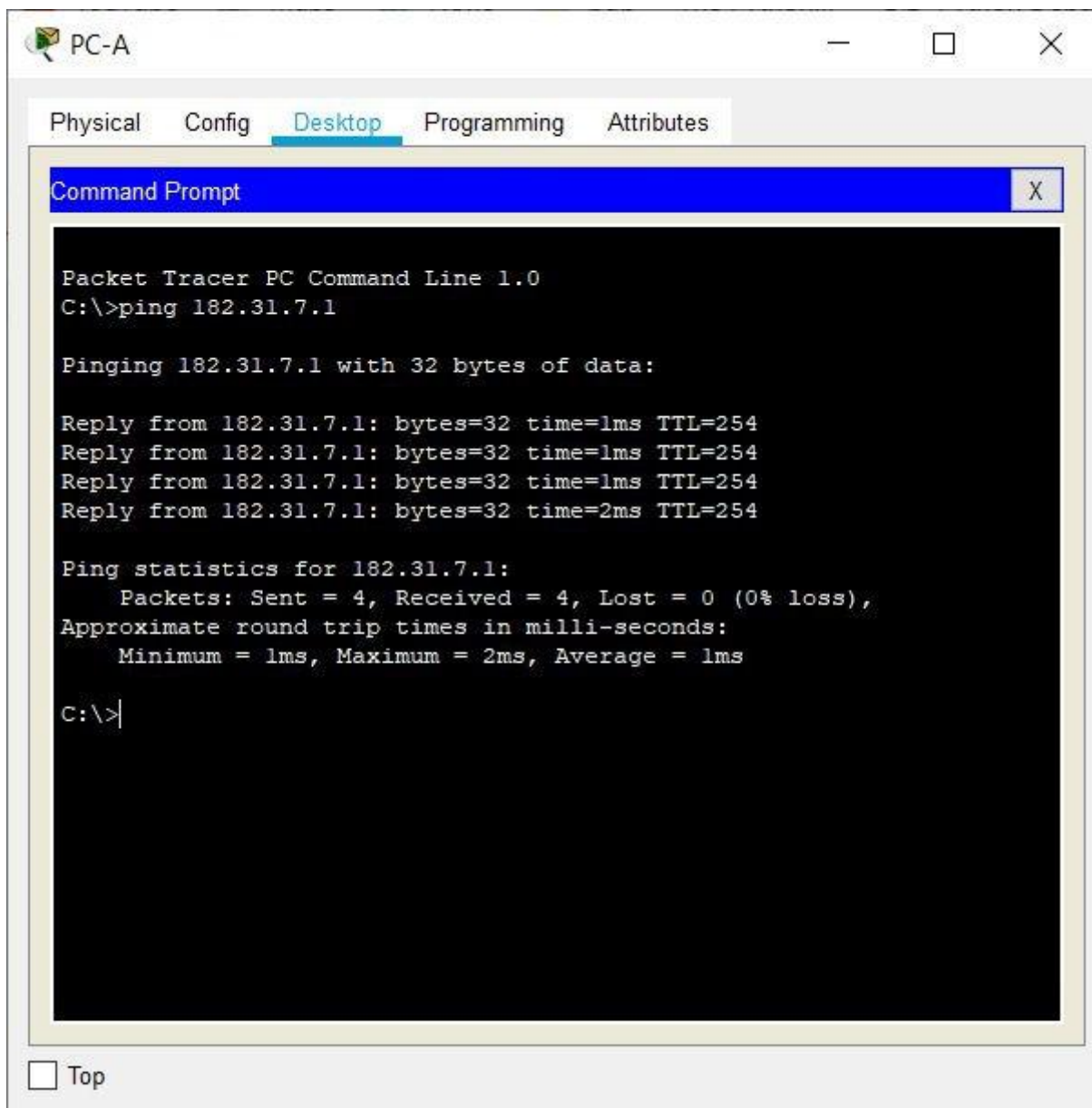
Gateway#
```

Ctrl+F6 to exit CLI focus

CopyPaste

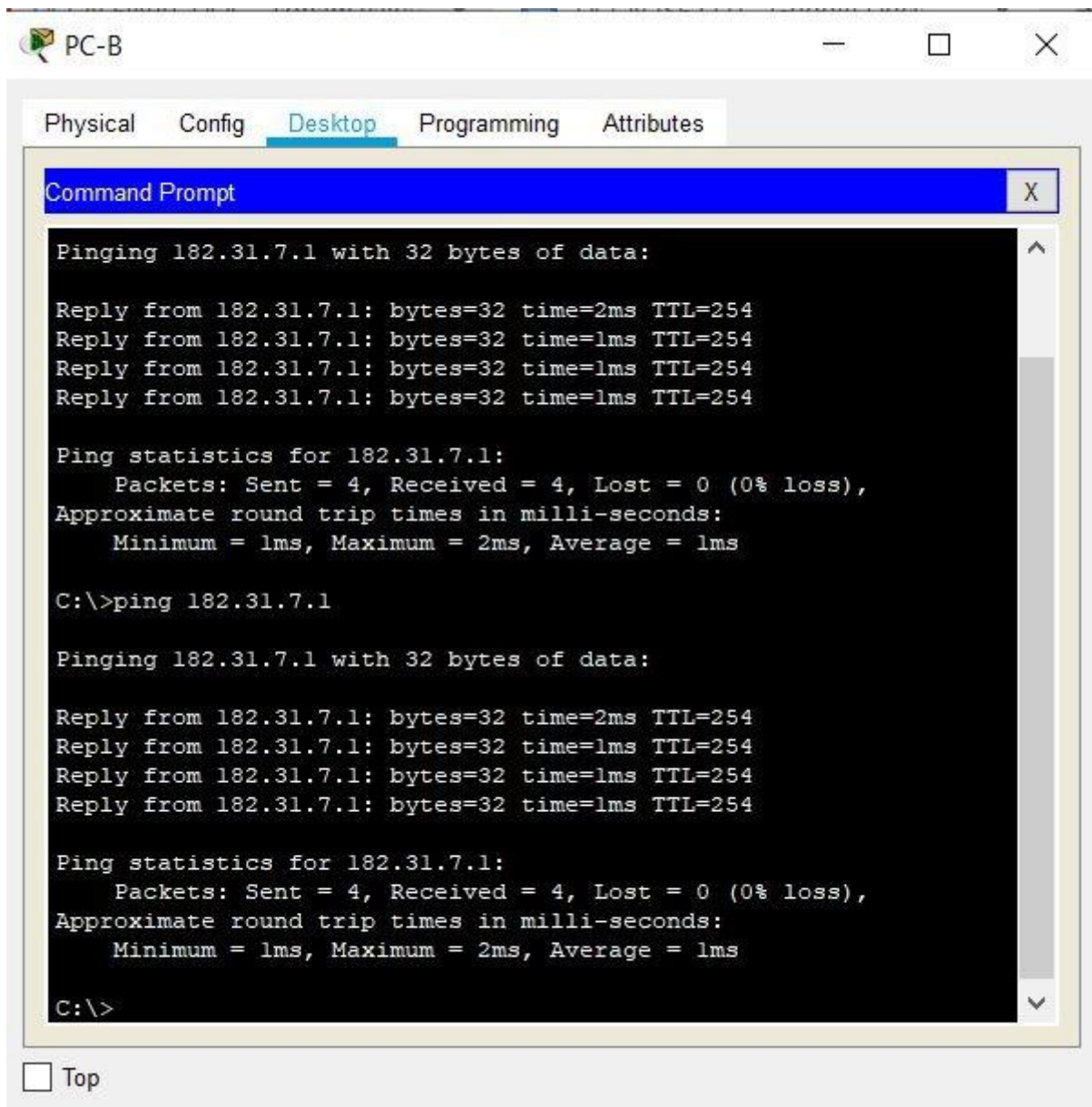
☐ Top

ping 182.31.7.1 from PC-A:





ping 182.31.7.1 from PC-B:



The screenshot shows a window titled "PC-B" with a tabbed interface. The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the results of a ping command to 182.31.7.1, including packet statistics and round trip times.

```
Physical  Config  Desktop  Programming  Attributes

Command Prompt

Pinging 182.31.7.1 with 32 bytes of data:

Reply from 182.31.7.1: bytes=32 time=2ms TTL=254
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254

Ping statistics for 182.31.7.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\>ping 182.31.7.1

Pinging 182.31.7.1 with 32 bytes of data:

Reply from 182.31.7.1: bytes=32 time=2ms TTL=254
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254
Reply from 182.31.7.1: bytes=32 time=1ms TTL=254

Ping statistics for 182.31.7.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\>
```

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